

Exhibit 1

SENDER: COMPLETE THIS SECTION		RECEIVER: COMPLETE THIS SECTION	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature <input checked="" type="checkbox"/> <i>R. Harris</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p>U.S. Army Corps of Engineers New Orleans District Office of Counsel (CEMVN-OC) ATTN: FOIA Coordinator P.O. Box 60267 New Orleans, Louisiana 70160-0267</p>		<p>B. Received by (Printed Name) <i>RH</i> C. Date of Delivery</p>	
		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
		<p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
		<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label)</p>		<p>7010 1870 0000 5143 5633</p>	
PS Form 3811, February 2004		Domestic Return Receipt	
		102595-02-M-1540	

From: [MVN-OC-FOIA](#)
To: [Anne Adams](#)
Subject: Read: 7564-06 June 29, 2011 Freedom of Information Act Request on behalf of Circle, Inc.
Date: Thursday, June 30, 2011 2:34:41 PM

Your message

To: MVN-OC-FOIA
Cc: 'W. Lee Kohler'
Subject: 7564-06 June 29, 2011 Freedom of Information Act Request on behalf of Circle, Inc.
Sent: Wed, 29 Jun 2011 14:23:29 -0500
was read on Thu, 30 Jun 2011 14:35:11 -0500

GARDNER & KEWLEY

A PROFESSIONAL LAW CORPORATION

1615 METAIRIE ROAD, SUITE 200
METAIRIE, LOUISIANA 70005

TELEPHONE: (504) 832-7222
FACSIMILE: (504) 832-7223
E-MAIL: kohler@bayoulaw.com

W. LEE KOHLER

Licensed in Louisiana & Texas

June 29, 2011
7564-06

VIA U.S. CERTIFIED MAIL
7010 1870 0000 5143 5633
RETURN RECEIPT REQUESTED
& VIA E-MAIL: MVN-OC-FOIA@usace.army.mil

U.S. Army Corps of Engineers
New Orleans District Office of Counsel (CEMVN-OC)
ATTN: FOIA Coordinator
P.O. Box 60267
New Orleans, Louisiana 70160-0267

RE: FREEDOM OF INFORMATION ACT REQUEST

**PROJECT: CONTRACT NO. W912P8-09-D-0052, TASK ORDER NO. 004
ST. CHARLES PARISH LEVEE, REACH 1A FROM CROSS
BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL -
PHASE 2, LPV-04.2A**

Dear Sir or Madam:

Under the Freedom of Information Act, 5 U.S.C. § 552, Circle, Inc., acting through undersigned counsel, requests that the Corps of Engineers provide Circle, Inc. with copies of the following identified documents and categories of documents:

DEFINITIONS

"Corps" shall mean the United States Army Corps of Engineers.

"Buck Town" shall mean Buck Town Contractors & Co.

"Circle" shall mean Circle, Inc.

"Eustis" shall mean Eustis Engineering Services, L.L.C.

U.S. Army Corps of Engineers
New Orleans District Office of Counsel (CEMVN-OC)
Freedom of Information Act Officer
June 29, 2011
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"Project" shall mean the public works project for improvements to a levee located in St. Charles Parish, Louisiana, which is the subject of U.S. Army Corps of Engineers Contract No. W912P8-09-D-0052, Task Order No. 0004.

"Levee Reach 1A" shall mean the earthen levee located in St. Charles Parish, Louisiana, which is the subject of the U.S. Army Corps of Engineers Contract No. W912P8-09-D-0052, Task Order No. 0004.

"Deficiency Notice No. 1" shall mean the notice of contract deficiency, dated March 25, 2010, issued by the Corps to Buck Town in connection with the Project. For reference purposes, a copy of Deficiency Notice No. 1 is attached hereto as Exhibit "A."

"Eustis Reports" collectively refers to the correspondence and/or reports issued by Eustis dated December 6, 2010, December 16, 2010, and December 22, 2010, which were provided to the Corps, and which reports contain Eustis' calculations and analyses of the factor of safety for Levee Reach 1A. For reference purposes, copies of the Eustis Reports are attached hereto as Exhibit "B."

"Alternate Levee Section" shall mean the alternate design for the levee profile, developed by the Corps, for corrective work to Levee Reach 1A and described in the Corps' November 19, 2010 letter and accompanying drawings. For reference purposes, the Corps' November 19, 2010 letter and accompanying drawings are attached hereto as Exhibit "C."

DOCUMENT REQUESTS

1. Any and all plans, drawings, notes, reviews, analyses, reports, calculations, technical evaluations, correspondence, e-mails, memoranda, meeting minutes or other documents of any kind which discuss, describe or relate to the design criteria, design parameters, and/or design factors of safety for the Project and/or, for the Alternate Levee Section.
2. Any and all notes, reports, correspondence, memoranda, e-mails, analyses, quality control reports, quality assurance reports, meeting minutes, or other documents of any kind, prepared by employees, agents, or representatives of the Corps, during the time period October 1, 2009 to present, which in any way discuss, describe or relate to the performance

U.S. Army Corps of Engineers
New Orleans District Office of Counsel (CEMVN-OC)
Freedom of Information Act Officer
June 29, 2011
Page 3

of the work by Buck Town in connection with the construction of the Project.

3. Any and all notes, correspondence, e-mails, reports, daily reports, memoranda, quality control reports, quality assurance reports, meeting minutes, or other documents of any kind, in any way relating to the Project, generated or prepared by any of the following individuals:
 - (a) Sheila W. Enclade
 - (b) Jeffrey J. Falati
 - (c) Bobby Akins
 - (d) Stuart Waits
 - (e) Mike Hudson
 - (f) Raul Diaz
 - (g) William Tholborn
 - (h) Perry D'Amica
 - (i) Otho Barnes
 - (j) Jamie Farmer
 - (k) Bennie Benson
 - (l) Lacie Petitto
 - (m) Violet Albright
 - (n) Mitchell D. Thomas
 - (o) Carl Anderson
 - (p) Bradley Durant.
4. Any and all notes, reports, correspondence, e-mails, memoranda, analyses, or other documents of any kind, prepared by employees, agents, inspectors or representatives of the Corps, during the time period October 1, 2009 to present, which in any way discuss, describe or relate to Buck Town's work and/or to the processing of Buck Town's payment applications in connection with the construction of the Project.

U.S. Army Corps of Engineers
New Orleans District Office of Counsel (CEMVN-OC)
Freedom of Information Act Officer
June 29, 2011
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5. Any and all notes, reports, studies, calculations, analyses, or other documents of any kind, which discuss, describe or relate to any analysis or evaluations performed by or determination made by the Corps that those portions of the Project constructed by Buck Town, which are the subject of Deficiency Notice No. 1, attached as Exhibit A, did not meet the factor of safety to which the Project was designed or otherwise failed to meet the requirements of the design criteria.
6. Any and all analyses, evaluations, calculations, or studies undertaken by the Corps to determine the factor of safety for Levee Reach 1A, as it was constructed by Buck Town with the alleged deficiency identified by the Corps in Deficiency Notice No. 1. Exhibit A.
7. Any and all analyses, evaluation, calculations, or studies undertaken by the Corps to evaluate the results described in any of the Eustis Reports.
8. Any and all correspondence, notes, memoranda, or other documents of any kind, in any way discussing, describing or relating to the Eustis Reports.
9. Any and all correspondence, notes, memoranda, or other documents of any kind, in any way discussing, describing or relating to meetings held by and/or between the Corps, Buck Town, and/or Eustis concerning the alleged deficiency which is the subject of Deficiency Notice No. 1.
10. Any and all correspondence, notes, memoranda, or other documents of any kind, in any way discussing, describing or relating to meetings held by the Corps, concerning the Project and/or the alleged deficiency which is the subject of Deficiency Notice No. 1.
11. Any and all analyses, evaluations, calculations, designs or studies undertaken by the Corps to develop the Alternate Levee Section.
12. Any and all correspondence, memoranda, notes, reports, studies, analyses, or other documents of any kind, in any way discussing, describing or relating to the development of the Alternate Levee Section.

U.S. Army Corps of Engineers
New Orleans District Office of Counsel (CEMVN-OC)
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13. Any and all photographs, digital images, videos or other visual depictions of the work performed by Buck Town or Circle in connection with the Project.

Please supply the records without informing me of the cost if the fees do not exceed \$750.00, which I agree to pay. Please return the documents to the attention of W. Lee Kohler, Esq., Gardner & Kewley, APLC, 1615 Metairie Road, Suite 200, Metairie, Louisiana 70005. Please advise if the Corps would prefer to make the documents available for inspection at the Corps' office.

If you deny any part or all of this request, please cite each specific exemption you think justifies your refusal to release the information requested and notify me of appeal procedures available under the law.

If you have any questions about handling this request, please contact me or Thomas F. Gardner, Esq. at: Gardner & Kewley, A.P.L.C., 1615 Metairie Road, Suite 200, Metairie, LA 70005, Telephone (504) 832-7222, Email: kohler@bayoulaw.com or gardner@bayoulaw.com. I thank you for your cooperation.

Sincerely,



W. LEE KOHLER
Counsel for Circle, Inc.

- Enclosures: 1. Exhibit A - Deficiency Notice No. 1
2. Exhibit B - Eustis Reports
3. Exhibit C - November 19, 2010-Letter

Exhibit "A"



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
NEW ORLEANS EAST BANK AREA OFFICE
990 NORTH CORPORATE DRIVE, SUITE 102
HARRAHAN, LOUISIANA 70123

March 25, 2010

SUBJECT: W912P8-09-D-0052 Task Order 0004, Lake Pontchartrain, Louisiana and Vicinity, Louisiana Project, North of Airline Highway, St. Charles Parish, Levee – Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall – Phase 2, LPV-04.2A (Letter C-022).

Buck Town Contractor & Co.
1005 Veterans Memorial Blvd.
Kenner, LA 70062

Gentlemen:

Reference enclosed Contract Deficiency Number One dated March 25, 2010. You are in violation of specification section 31 05 19.05 12, paragraph 3.1.1 by installing reinforcement geotextile overlaps parallel to the centerline of the levee. The above referenced paragraph states "All seams and overlaps shall be placed perpendicular to the centerline of the levee. Fill shall not be placed on the geotextile until the seams or overlaps are within 5 degrees of being perpendicular to the levee centerline".

Your proposed corrective action to address the above noted deficiency should be forwarded to the Government no later than March 30, 2010. Any costs associated with this corrective action shall be borne by your company at no cost to the Government. In addition, please revise your Quality Control Plan to reflect this contract requirement.

This breakdown in your quality control program has been noted by this office, and may be used to determine your overall quality of workmanship when the performance evaluation is performed upon completion of the contract.

If you have any additional questions concerning this matter, please contact Mr. Bobby Akins at (504) 862-1508 or myself at (504) 862-2980.

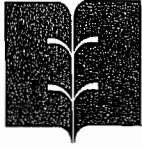
Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey J. Falati".

Jeffrey J. Falati, P.E.
Contracting Officer's Representative

Enclosure

CORPS OF ENGINEERS, U.S. ARMY		DATE: 25 March 2010
NOTICE OF CONTRACT DEFICIENCY		
JOB DEFICIENCY NO. 001	SAME SUBJECT DEFICIENCY NO.	
JOB: W912P8-09-D-0052 Task Order 0004		
LOCATION: St. Charles Parish, Levee – Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall		
DEFICIENCIES NOTED:		
<p>Reinforcement geotextile overlaps were placed parallel to the centerline of the levee.</p> <p>Contract specification Section 31 05 19.05 12 paragraph 3.1 Installation, subparagraph 3.1.1 Procedure, states that "All seams and overlaps shall be placed perpendicular to the centerline of the levee. Fill shall not be placed on the geotextile until the seams or overlaps are within 5 degrees of being perpendicular to the levee centerline".</p>		
REQUIRED CORRECTIVE ACTION: Your corrective action plan addressing the above noted deficiency should be forwarded to the Government no later than March 30, 2010.		
CORRECTIVE ACTION SHALL BE TAKEN BY: Immediately, 25 March 2010		
NAME: Jeffrey Falati	Issued To: George LeBourgeois	
TITLE: Contracting Officer's Representative	Date/Time: 25 March 2010 @ 3:00pm	



EUSTIS ENGINEERING SERVICES, L.L.C.

3011 28TH STREET
METAIRIE, LOUISIANA 70002-6019
PN 504-834-0157 | FN 504-834-0354
EMAIL: INFO@EUSTISENG.COM | SITE: WWW.EUSTISENG.COM

Exhibit "B"

6 December 2010

Bucktown Contractors and Company
Suite 201
1005 Veterans Memorial Boulevard
Kenner, Louisiana 70062

Attention Mr. George LeBourgeois
Vice President - Construction

Gentlemen:

Geotechnical Engineering Analyses and Evaluations
U.S. Army Corps of Engineers
Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall
Phase 2 (LPV-04.2a)
St. Charles Parish, Louisiana
Eustis Engineering Project No. 21126

This letter provides the results of Eustis Engineering Services, L.L.C.'s evaluation of the levees between Stations 260+56.01 to 280+66.84 and Stations 284+70.84 to 293+00. Within these reaches, reinforcing geotextile fabric was placed in strips overlapped parallel to the levee centerline. In general, we understand geofabric was delivered in approximate 300-ft rolls placed in two 120-ft strips and overlapped for a third strip. Overlap requirements and individual roll quantities resulted in varying overlap positions.

The U.S. Army Corps of Engineers' analyses determined the reduction in available reinforcement strength reduced the factors of safety in these levee reaches to below acceptable limits. The USACE analyses are based on borings made in November 2006, prior to the construction of the levee. Placement of fill has affected the consolidation of the underlying soils and this consolidation has caused a gain in undrained shear strength of the levees. Eustis Engineering has made analyses to estimate this gain in strength. We have also performed stability analyses to determine the computed factor of safety of the levee considering the gain in shear strength and the effects of the reduced reinforcement.

Bucktown Contractors and Company
6 December 2010

Furnished information

The USACE provided to Bucktown Contractors and Company and, in turn, to Eustis Engineering, the results of borings, laboratory tests, and design stability analyses based on the November 2006 borings and testing. The USACE subsequently provided the results of consolidation tests performed on samples obtained from the borings. The results of the borings and laboratory tests, including the consolidation tests, were used as the basis for the analyses provided in this letter. The results of the consolidation tests are included as Appendix I of this letter. Eustis Engineering was also provided contract drawings prepared by the USACE for construction of the project.

Site Conditions

The project was for the enlargement of a preexisting hurricane protection levee. The preexisting levee crown was at approximate el 13 with stability berms bringing the total footprint to approximately 230 feet. The levee crown was raised to approximate el 16.5 and the footprint increased to 260 feet. Within the reaches in question, the preexisting levee was degraded and reinforcing fabric placed at approximate el 3. The reinforcing fabric was placed in 120-ft strips placed asymmetrically about the center at el 3. The geofabric had a specified tensile strength of 1,450 lbs/in. (17,400 lbs/ft) at 5% strain.

Geology

Beneath the existing levee fill, the project site is characterized by surficial swamp/marsh deposits extending to approximate el -10. These deposits are organic clays and peats interspersed with clays with high organic content. The swamp/marsh deposits are underlain by interdistributary deposits of very soft to medium stiff gray clays interbedded with numerous sand and silt layers and lenses and overlie precompressed Pleistocene Age deposits. Pleistocene deposits are initially encountered at depths ranging between approximate el -50 and el -52.

Gain in Strength

Preconsolidation Stresses. Eustis Engineering was provided the results of 22 consolidation tests conducted on samples from borings made within in the project reaches. The maximum preconsolidated pressures as indicated by these consolidation tests were normalized to an undrained shear strength (assuming a compression ratio of 0.22). These shear strengths were compared to similar normalized induced stresses from the preexisting levee (crown at approximate el 13). These comparisons are shown on Enclosure 1, Sheets 1 through 5, and indicate the preexisting levee to be underconsolidated with

Bucktown Contractors and Company
6 December 2010

respect to existing consolidation stresses. Also shown on Enclosure 1 are final stresses for a levee constructed to el 16.

Drainage. The coefficients of consolidation (C_v) were selected at stresses within the normal consolidation part of the consolidation tests. As expected, C_v values varied widely having an average of all tests of 0.14 ft² per day with a standard deviation of 0.18 ft² per day. This wide variation was reevaluated by discarding all C_v values above 0.2 ft² per day producing an average C_v to be 0.07 ft² per day with a standard deviation of 0.04 ft² per day. C_v equal to 0.07 ft² per day was selected for further evaluation. The percent consolidation at the time the borings were drilled (November 2006) was then made by comparison of the normalized shear strengths at the centerline of the levee compared to the shear strength selected by the USACE for design of the levee. These percent consolidations vary with depth, but when plotted as a function of depth indicate an essentially constant time factor varying with depth for double drainage conditions. Supporting calculations are shown in Appendix II.

Estimated Gain in Strength

We estimate the time factor at the time of the borings to be 0.65 and the corresponding levee to be effectively in place approximately 18.5 years. The time for 100% consolidation is estimated to be 44.4 years (see supporting calculations in Appendix II). We have the estimated a gain in strength based on four years further consolidation (2006 to 2010) for the preexisting levee and an additional gain for placement of new fill in place for approximately one-half year. The results of these analyses are shown on Enclosure 2, Sheets 1 through 5. Sheets 1 through 5 evaluate strength gains at five points along the levee profile. These are at the centerline, intermediate points along the berm, and at the levee toe. These strength gains were applied on each side of the levee centerline and produce a shear strength profile for stability analyses. A tabulation of these shear strengths is shown in Sheet 1, Enclosures 3 and 4.

Stability Analyses

Levee stability analyses were performed using Spencer's Method of Slices coded within computer software Slope/W. Analyses consider circular and non-circular failure surfaces with optimization. For these analyses, we assumed the mobilized geofabric strength was 11,600 lbs/ft. This considers two-thirds of the geofabric to be effective to model the reported full length strips and to disregard the overlapped strips. Analyses were performed for a water surface at still water level as supplied by the USACE and at the top of levee. Required factors of safety were 1.4 and 1.5, respectively, for these design conditions. A minimum factor of safety of 1.4 was required for low water conditions to the protected side. Results of our analyses are tabulated on Enclosure 3, Sheets 1 and 2 with computer output

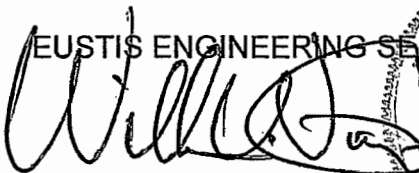
Bucktown Contractors and Company
6 December 2010

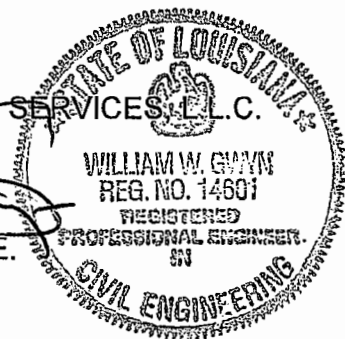
of our analyses included as Appendix III. The results of our analyses indicate the factor of safety for current conditions meet the USACE requirements.

Finally, Eustis Engineering performed stability analyses considering the current estimated shear strength profile with minimal geofabric reinforcement. To provide the required factor of safety, we have assumed placement of sand fill in the area between the toe of the levee and the right-of-way limit on the protected side and between the toe of the levee and the edge of swamp on the flood side. Results of the analyses are included as Enclosure 4, Sheets 1 and 2. Mobilized geofabric strengths necessary to maintain the factors of safety are indicated on the tabular summaries on Sheet 2 of Enclosure 4. Computer output is included as Appendix IV. These analyses indicate the required effective reinforcement levels to be at 16.7% (2,900 lbs/ft) of the specified strength for hurricane conditions and 36.2% (6,300 lbs/ft) for non-hurricane conditions.

We hope this fulfills your needs relative to the evaluation of the Reach 1A levee. Should you require further information or clarification of this letter, please do not hesitate to contact us.

Yours very truly,


WILLIAM W. GWYN, P.E.

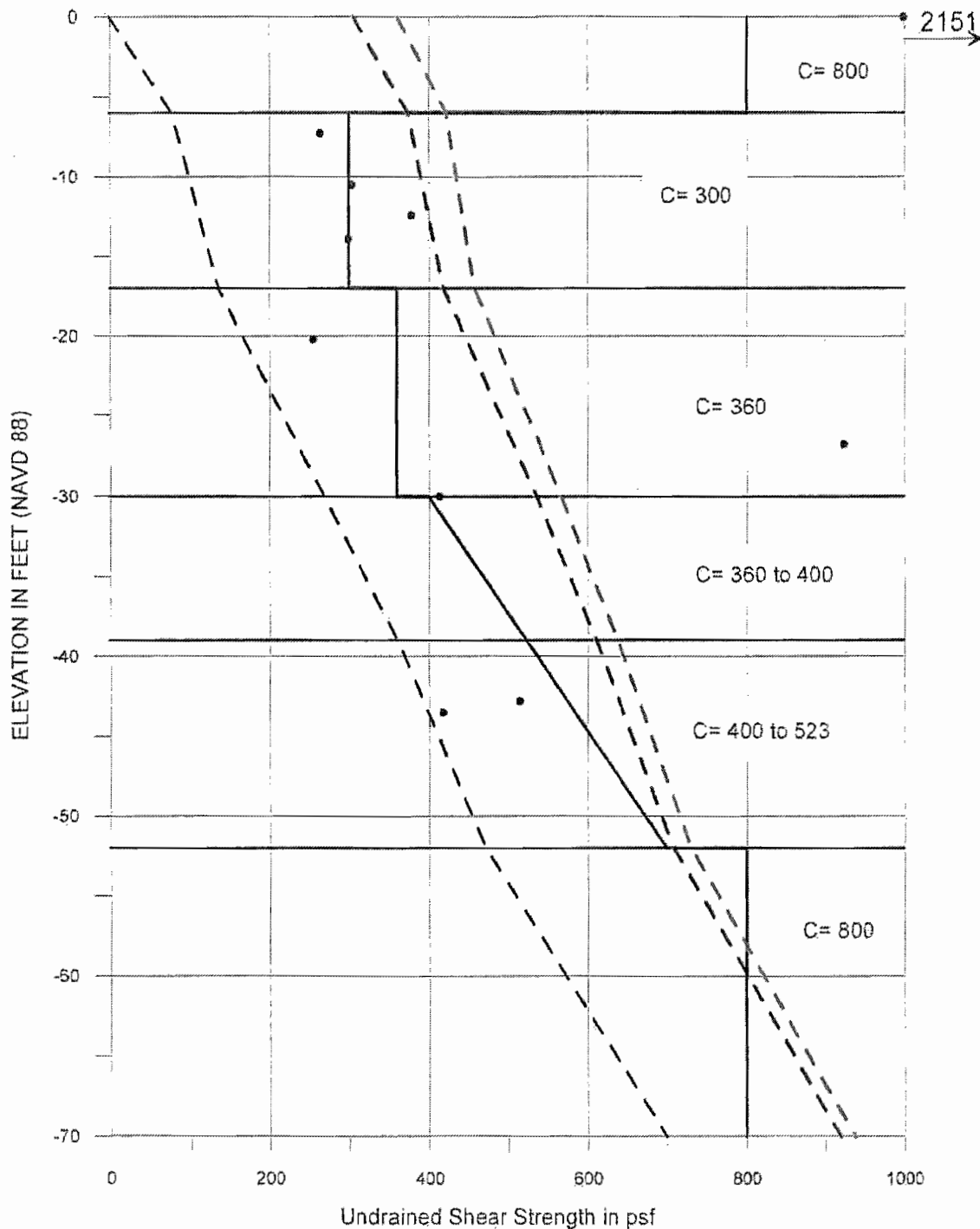


EUSTIS ENGINEERING SERVICES, L.L.C.
WILLIAM W. GWYN
REG. NO. 14601
REGISTERED
PROFESSIONAL ENGINEER
SI
CIVIL ENGINEERING

WWG:cjc/aln

Enclosures 1 through 4
Appendices I through IV

SHEAR STRENGTH VS ELEVATION (NAVD 88) CENTER OF LEVEE



- DESIGN SHEAR STRENGTHS
- - - C/P = .22 FOR PREEXISTING LEVEE (EL +13)
- - - C/P = .22 FOR PROPOSED LEVEE (EL +16)
- - - C/P = .22 BEFORE PREEXISTING LEVEE
- C/P = .22 - CONSOLIDATION DATA



EUSTIS ENGINEERING SERVICES, L.L.C.
 GEOTECHNICAL ENGINEERS
 3011 28TH STREET METAIRIE, LOUISIANA

REACH 1A - STATION 264+00

**POINT 1
CENTERLINE PARAMETERS**

DRAWN BY: M.K.M.

27 OCT 2010

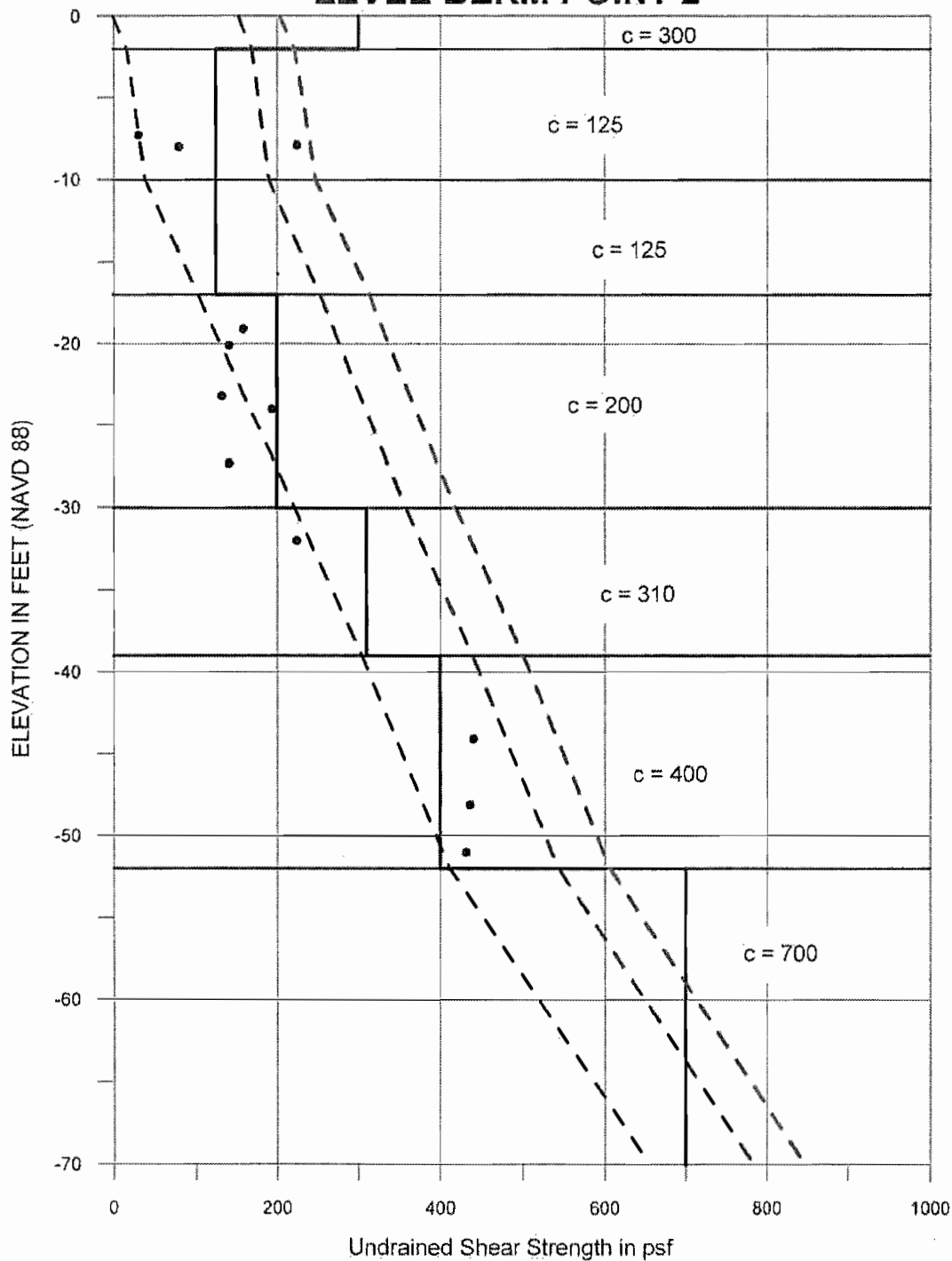
FILE CENTERLINE
SHEAR STR. GRF

CHECKED BY: W.W.G.

JOB NO. 21126

ENCLOSURE 1
SHEET 1

SHEAR STRENGTH VS ELEVATION (NAVD 88) LEVEE BERM POINT 2



	DESIGN SHEAR STRENGTHS
	PT. 2 - $C/P = .22$ FOR PREEXISTING LEVEE (EL +13)
	PT. 2 - $C/P = .22$ FOR PROPOSED LEVEE (EL +16)
	$C/P = .22$ BEFORE PREEXISTING LEVEE
	$C/P_c = .22$ - CONSOLIDATION DATA



EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3011 28TH STREET METAIRIE, LOUISIANA

REACH 1A - STATION 264+00

POINT 2
BERM PARAMETERS

DRAWN BY M K M

27 OCT. 2010

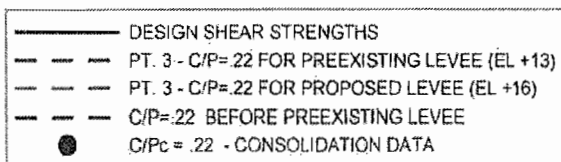
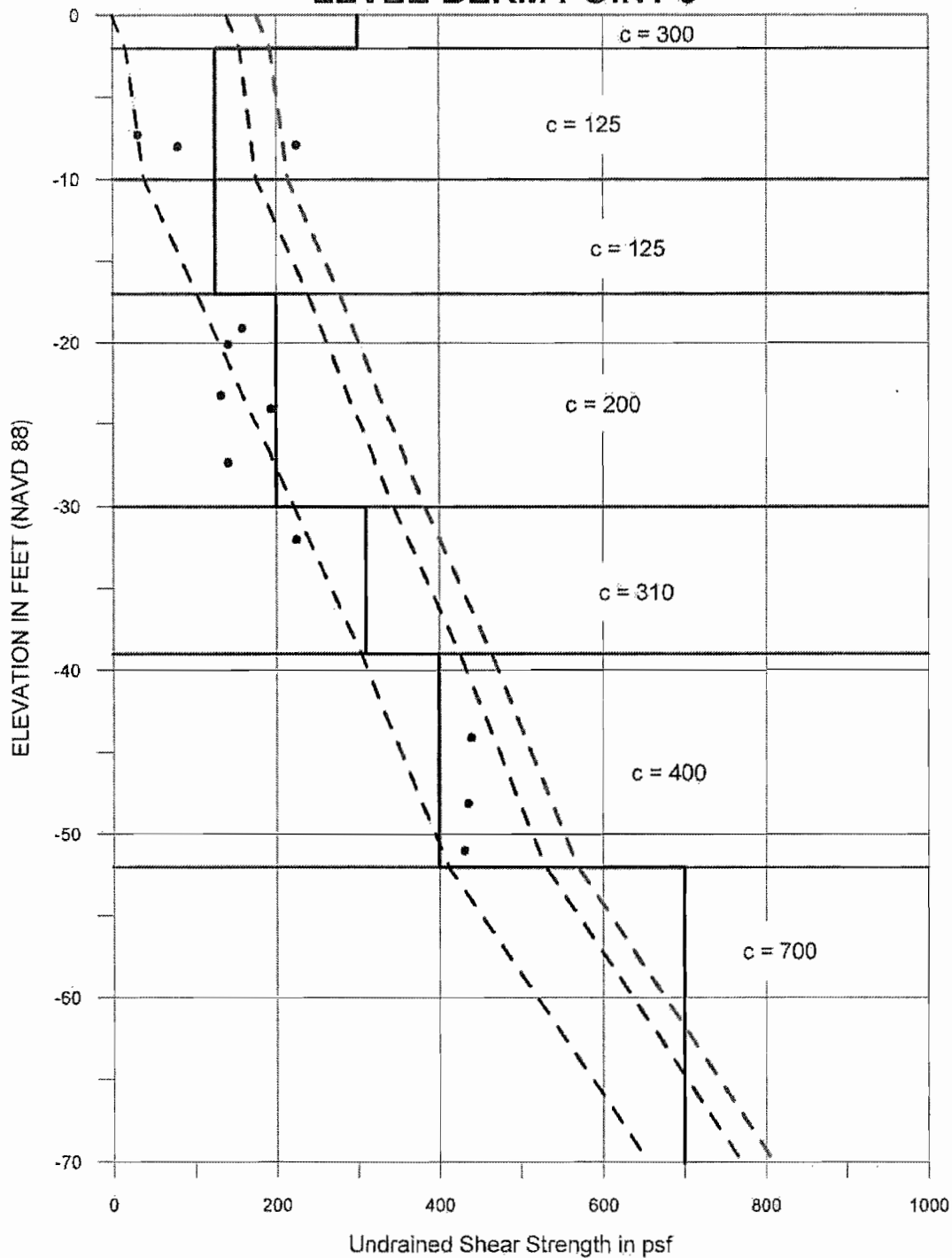
FILE: BERM PT2
SHEAR STR GRF

CHECKED BY W W G

JOB NO 21126

ENCLOSURE 1
SHEET 2

SHEAR STRENGTH VS ELEVATION (NAVD 88) LEVEE BERM POINT 3



EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
 3011 28TH STREET METAIRIE, LOUISIANA

REACH 1A - STATION 264+00

**POINT 3
BERM PARAMETERS**

DRAWN BY: M KM

27 OCT. 2010

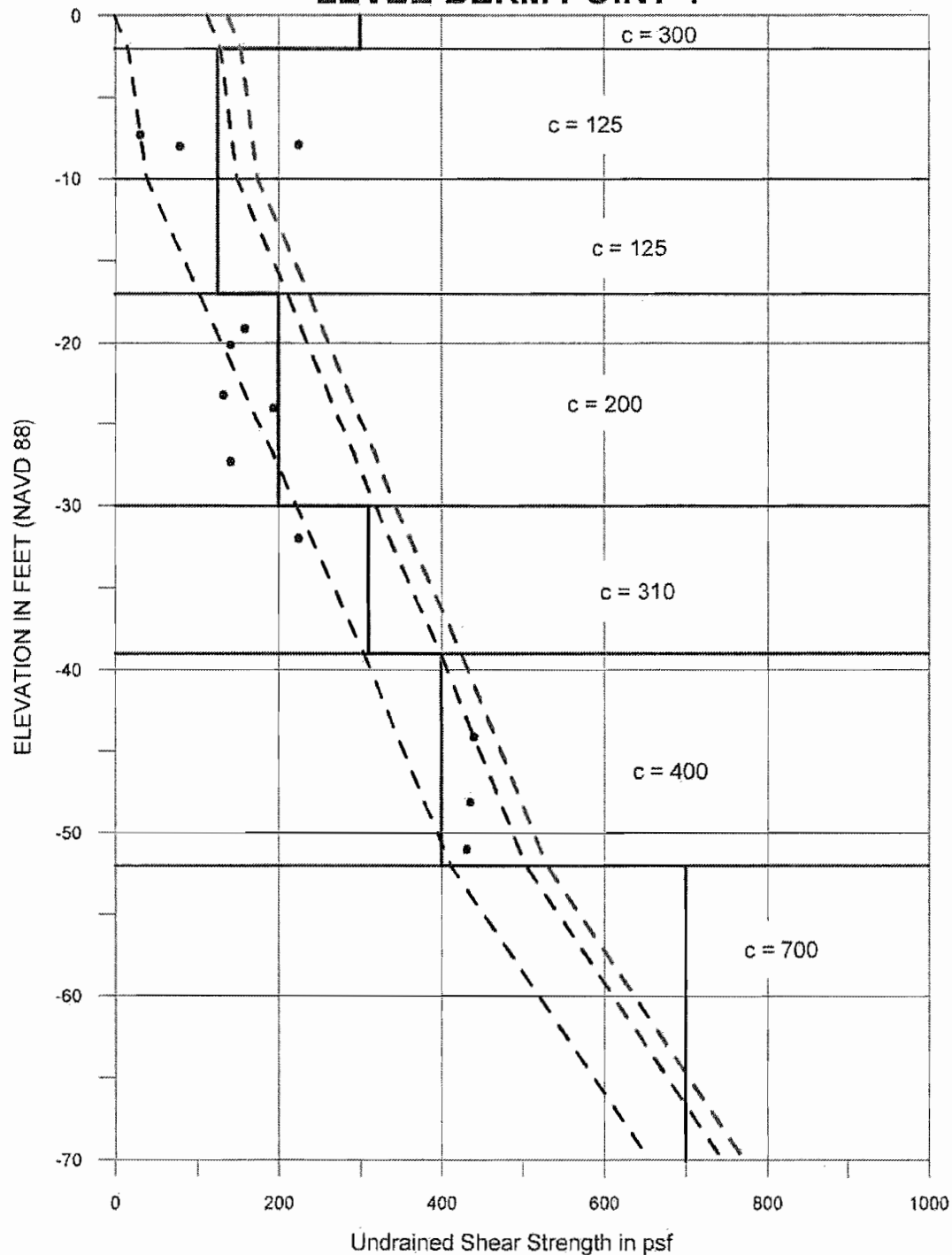
FILE: BERM PT3
SHEAR STR GRF

CHECKED BY: WWG

JOB NO.: 21126

ENCLOSURE 1
SHEET 3

SHEAR STRENGTH VS ELEVATION (NAVD 88) LEVEE BERM POINT 4



—	DESIGN SHEAR STRENGTHS
---	PT. 4 - C/P=.22 FOR PREEXISTING LEVEE (EL +13)
---	PT. 4 - C/P=.22 FOR PROPOSED LEVEE (EL +16)
---	C/P=.22 BEFORE PREEXISTING LEVEE
●	C/P=.22 - CONSOLIDATION DATA



EUSTIS ENGINEERING SERVICES, L.L.C.
 GEOTECHNICAL ENGINEERS
 3011 28TH STREET METAIRIE, LOUISIANA

REACH 1A - STATION 264+00

**POINT 4
BERM PARAMETERS**

DRAWN BY M.K.M.

27 OCT. 2010

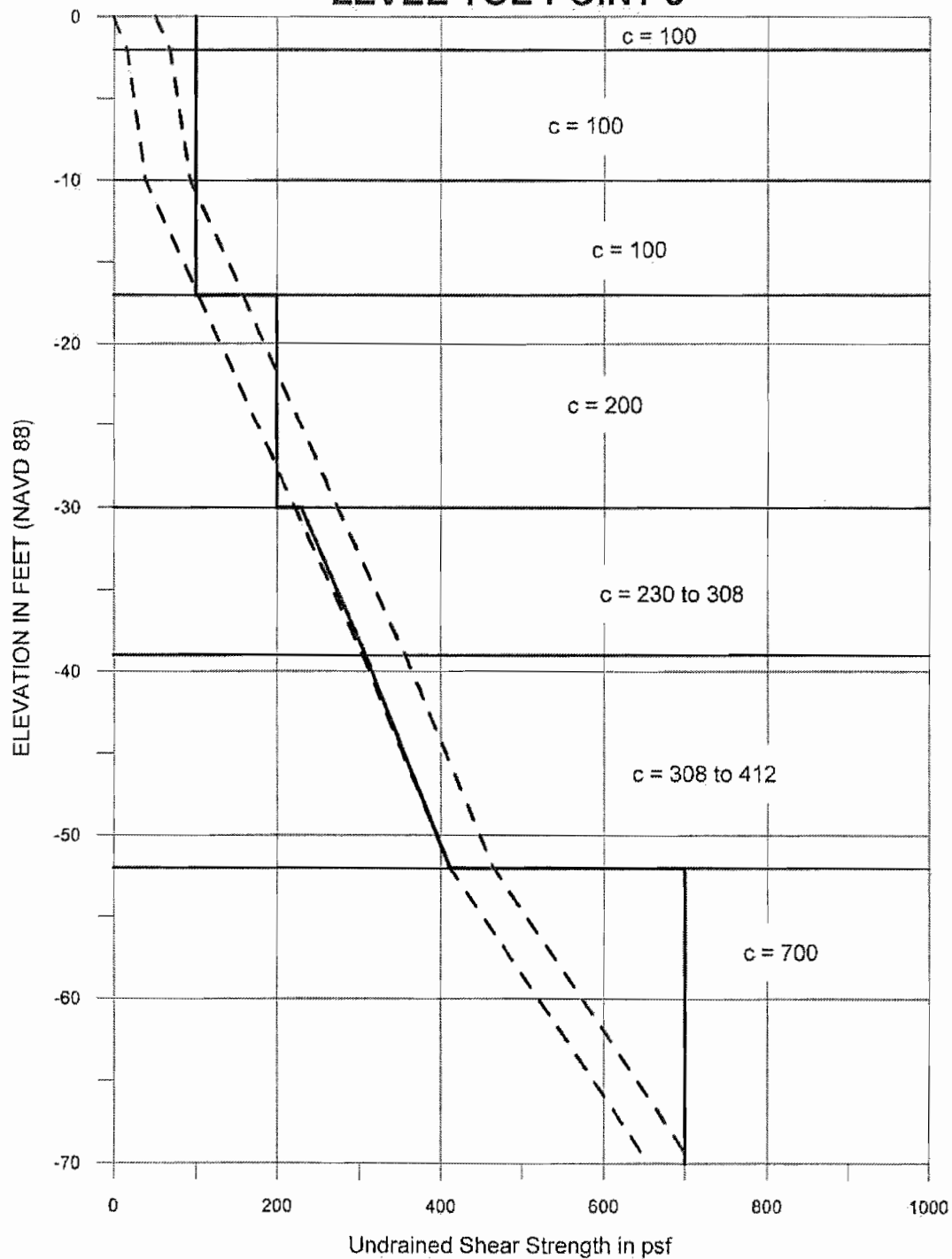
FILE BERM PT4
SHEAR STR.GRF

CHECKED BY W.W.G.

JOB NO. 21126

ENCLOSURE 1
SHEET 4

SHEAR STRENGTH VS ELEVATION (NAVD 88) LEVEE TOE POINT 5



—	DESIGN SHEAR STRENGTHS
- - -	PT. 5 - C/P= 22 FOR PREEXISTING LEVEE (EL +13)
- - -	C/P= 22 BEFORE PREEXISTING LEVEE



EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3011 28TH STREET METAIRIE, LOUISIANA

REACH 1A - STATION 264+00

POINT 5
TOE PARAMETERS

DRAWN BY: M K M

27 OCT. 2010

FILE: TOE PT5
SHEAR STR.GRF

CHECKED BY: W.W.G

JOB NO. 21126

ENCLOSURE 1
SHEET 5

CENTERLINE

CONSOLIDATION RATIO FOR PREEXISTING LEVEE

Stratum	22.5 years		25 years		28 years		33 years	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.79	OC	0.88	OC	0.98	OC	1.00	1.00
2	0.79	0.88	0.88	0.90	0.98	1.00	1.00	1.00
3	0.79	0.82	0.88	0.85	0.98	1.00	1.00	1.00
4	0.79	0.865	0.88	0.89	0.98	1.00	1.00	1.00
5	0.79	0.93	0.88	0.99	0.98	1.00	1.00	1.00

STRENGTH AT CENTERLINE FOR PREEXISTING FILL

Stratum	SU ₁₀₀	SU			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	330	800	800	800	800
2	390	343	351	390	390
3	470	385	400	470	470
4	570	493	507	570	570
5	660	614	653	660	660

STRENGTH AT CENTERLINE FOR ADDED FILL

Stratum	ΔP	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	50	21	38.5	43	45.5
2	48	2.88	11.04	21.12	31.2
3	30	---	1.5	6.6	14.7
4	28	0.56	4.48	10.36	16.52
5	25	6.25	14	17.5	20.25

TOTAL STRENGTH AT CENTERLINE

Stratum	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	800	800	800	800
2	346	362	411	421
3	385	401	477	485
4	494	512	580	587
5	620	667	678	680

CONSOLIDATION RATIO FOR ADDED FILL

Stratum	6 MONTHS		2.5 YEARS		5.5 YEARS		10.5 YEARS	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.018	0.42	0.088	0.77	0.193	0.86	0.368	0.91
2	0.018	0.06	0.088	0.23	0.193	0.44	0.368	0.65
3	0.018	NEG	0.088	0.05	0.193	0.22	0.368	0.49
4	0.018	0.02	0.088	0.16	0.193	0.37	0.368	0.59
5	0.018	0.25	0.088	0.56	0.193	0.70	0.368	0.81

QUERY POINT 2

CONSOLIDATION RATIO FOR PREEXISTING LEVEE

Stratum	22.5 years		25 years		28 years		33 years	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.79	0.97	0.88	0.975	0.98	1.00	1.00	1.00
2	0.79	0.88	0.88	0.90	0.98	1.00	1.00	1.00
3	0.79	0.82	0.88	0.85	0.98	1.00	1.00	1.00
4	0.79	0.865	0.88	0.89	0.98	1.00	1.00	1.00
5	0.79	0.93	0.88	0.99	0.98	1.00	1.00	1.00

STRENGTH AT QUERY POINT 2 FOR PREEXISTING FILL

Stratum	Su100	Su			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	240	232.8	234	240	240
2	290	255	261	290	290
3	375	308	319	375	375
4	470	407	418	470	470
5	560	521	554	560	560

STRENGTH AT QUERY POINT 2 FOR ADDED FILL

Stratum	ΔP	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	73.5	30.87	56.595	63.21	66.885
2	76	4.56	17.48	33.44	49.4
3	74	—	3.7	16.28	36.26
4	72	1.44	11.52	26.64	42.48
5	71.5	17.875	40.04	50.05	57.915

TOTAL STRENGTH AT QUERY POINT 2

Stratum	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	264	291	303	307
2	260	278	323	339
3	308	322	391	411
4	408	430	497	512
5	539	594	610	618

CONSOLIDATION RATIO FOR ADDED FILL

Stratum	6 MONTHS		2.5 YEARS		5.5 YEARS		10.5 YEARS	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.018	0.42	0.088	0.77	0.193	0.86	0.368	0.91
2	0.018	0.06	0.088	0.23	0.193	0.44	0.368	0.65
3	0.018	NEG	0.088	0.05	0.193	0.22	0.368	0.49
4	0.018	0.02	0.088	0.16	0.193	0.37	0.368	0.59
5	0.018	0.25	0.088	0.56	0.193	0.70	0.368	0.81

QUERY POINT 3

CONSOLIDATION RATIO FOR PREEXISTING LEVEE

Stratum	22.5 years		25 years		28 years		33 years	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.79	0.97	0.88	0.975	0.98	1.00	1.00	1.00
2	0.79	0.88	0.88	0.90	0.98	1.00	1.00	1.00
3	0.79	0.82	0.88	0.85	0.98	1.00	1.00	1.00
4	0.79	0.865	0.88	0.89	0.98	1.00	1.00	1.00
5	0.79	0.93	0.88	0.99	0.98	1.00	1.00	1.00

STRENGTH AT QUERY POINT 3 FOR PREEXISTING FILL

Stratum	Su100	Su			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	190	184.3	185.25	190	190
2	230	202	207	230	230
3	315	258	268	315	315
4	410	355	365	410	410
5	510	474	505	510	510

STRENGTH AT QUERY POINT 3 FOR ADDED FILL

Stratum	ΔP	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	46	19.32	35.42	39.56	41.86
2	45.8	2.748	10.534	20.152	29.77
3	43.9	—	2.195	9.658	21.511
4	42.5	0.85	6.8	15.725	25.075
5	42	10.5	23.52	29.4	34.02

TOTAL STRENGTH AT QUERY POINT 3

Stratum	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	204	221	230	232
2	205	218	250	260
3	258	270	325	337
4	356	372	426	435
5	485	528	539	544

CONSOLIDATION RATIO FOR ADDED FILL

Stratum	6 MONTHS		2.5 YEARS		5.5 YEARS		10.5 YEARS	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.018	0.42	0.088	0.77	0.193	0.86	0.368	0.91
2	0.018	0.06	0.088	0.23	0.193	0.44	0.368	0.65
3	0.018	NEG	0.088	0.05	0.193	0.22	0.368	0.49
4	0.018	0.02	0.088	0.16	0.193	0.37	0.368	0.59
5	0.018	0.25	0.088	0.56	0.193	0.70	0.368	0.81

QUERY POINT 4

CONSOLIDATION RATIO FOR PREEXISTING LEVEE

Stratum	22.5 years		25 years		28 years		33 years	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.79	0.97	0.88	0.975	0.98	1.00	1.00	1.00
2	0.79	0.88	0.88	0.90	0.98	1.00	1.00	1.00
3	0.79	0.82	0.88	0.85	0.98	1.00	1.00	1.00
4	0.79	0.865	0.88	0.89	0.98	1.00	1.00	1.00
5	0.79	0.93	0.88	0.99	0.98	1.00	1.00	1.00

STRENGTH AT QUERY POINT 4 FOR PREEXISTING FILL

Stratum	SU ₁₀₀	SU			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	160	155.2	156	160	160
2	190	167	171	190	190
3	285	234	242	285	285
4	375	324	334	375	375
5	470	437	465	470	470

STRENGTH AT QUERY POINT 4 FOR ADDED FILL

Stratum	ΔP	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	28	11.76	21.56	24.08	25.48
2	29.2	1.752	6.716	12.848	18.98
3	29.5	—	1.475	6.49	14.455
4	29.5	0.59	4.72	10.915	17.405
5	30	7.5	16.8	21	24.3

TOTAL STRENGTH AT QUERY POINT 4

Stratum	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	167	178	184	185
2	169	178	203	209
3	234	244	291	299
4	325	338	386	392
5	445	482	491	494

CONSOLIDATION RATIO FOR ADDED FILL

Stratum	6 MONTHS		2.5 YEARS		5.5 YEARS		10.5 YEARS	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.018	0.42	0.088	0.77	0.193	0.86	0.368	0.91
2	0.018	0.05	0.088	0.23	0.193	0.44	0.368	0.65
3	0.018	NEG	0.088	0.05	0.193	0.22	0.368	0.49
4	0.018	0.02	0.088	0.16	0.193	0.37	0.368	0.59
5	0.018	0.25	0.088	0.56	0.193	0.70	0.368	0.81

QUERY POINT 5

CONSOLIDATION RATIO FOR PREEXISTING LEVEE

Stratum	22.5 years		25 years		28 years		33 years	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.79	0.97	0.88	0.975	0.98	1.00	1.00	1.00
2	0.79	0.88	0.88	0.90	0.98	1.00	1.00	1.00
3	0.79	0.82	0.88	0.85	0.98	1.00	1.00	1.00
4	0.79	0.865	0.88	0.89	0.98	1.00	1.00	1.00
5	0.79	0.93	0.88	0.99	0.98	1.00	1.00	1.00

STRENGTH AT QUERY POINT 5 FOR PREEXISTING FILL

Stratum	Su100	Su			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	65	63.05	63.375	65	65
2	115	101	104	115	115
3	210	172	179	210	210
4	310	268	276	310	310
5	410	381	406	410	410

STRENGTH AT QUERY POINT 5 FOR ADDED FILL

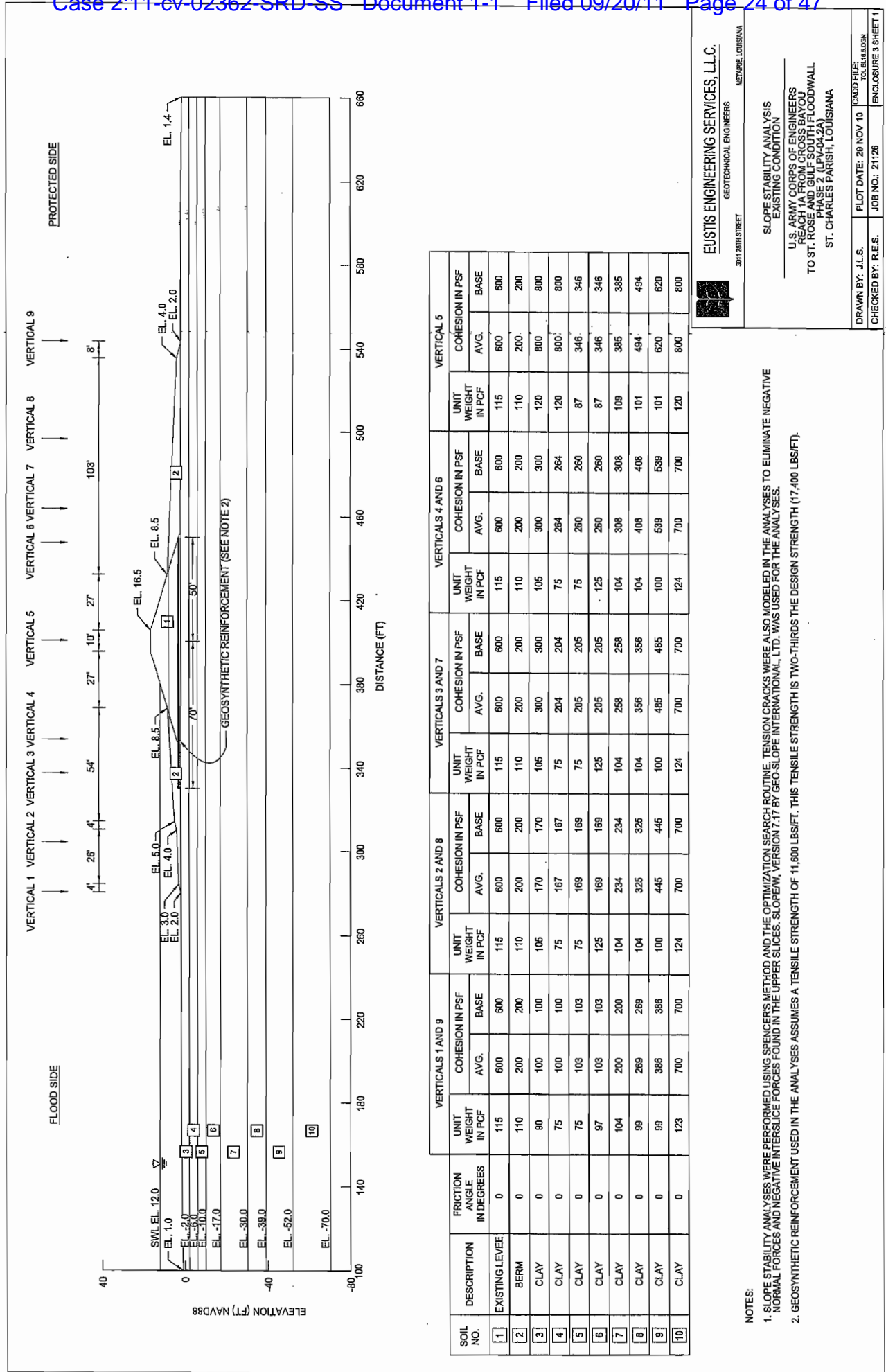
Stratum	ΔP	Su			
		6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	25	10.5	19.25	21.5	22.75
2	22.4	1.344	5.152	9.856	14.56
3	20.8	—	1.04	4.576	10.192
4	20	0.4	3.2	7.4	11.8
5	19.9	4.975	11.444	13.93	16.119

CONSOLIDATION RATIO FOR ADDED FILL

Stratum	6 MONTHS		2.5 YEARS		5.5 YEARS		10.5 YEARS	
	T	U (from chart)	T	U (from chart)	T	U (from chart)	T	U (from chart)
1	0.018	0.42	0.088	0.77	0.193	0.86	0.368	0.91
2	0.018	0.06	0.088	0.23	0.193	0.44	0.368	0.65
3	0.018	NEG	0.088	0.05	0.193	0.22	0.368	0.49
4	0.018	0.02	0.088	0.16	0.193	0.37	0.368	0.59
5	0.018	0.25	0.088	0.56	0.193	0.70	0.368	0.81

TOTAL STRENGTH AT QUERY POINT 5

Stratum	6 MONTHS	2.5 YEARS	5.5 YEARS	10.5 YEARS
1	74	83	87	88
2	103	109	125	130
3	172	180	215	220
4	269	279	317	322
5	386	417	424	426



NOTES:

1. SLOPE STABILITY ANALYSES WERE PERFORMED USING SPENCER'S METHOD AND THE OPTIMIZATION SEARCH ROUTINE. TENSION CRACKS WERE ALSO MODELED IN THE ANALYSES TO ELIMINATE NEGATIVE NORMAL FORCES AND NEGATIVE INTERSLICE FORCES FOUND IN THE UPPER SLICES. SLOPE/W, VERSION 7.17 BY GEO-SLOPE INTERNATIONAL, LTD. WAS USED FOR THE ANALYSES.

2. GEOSYNTHETIC REINFORCEMENT USED IN THE ANALYSES ASSUMES A TENSILE STRENGTH OF 11,800 LBS/FT. THIS TENSILE STRENGTH IS TWO-THIRDS THE DESIGN STRENGTH (17,400 LBS/FT).

EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3811 28TH STREET
METairie, LOUISIANA

SLOPE STABILITY ANALYSIS
EXISTING CONDITION

U.S. ARMY CORPS OF ENGINEERS
REACH 1A FROM CROSS BAYOU
TO ST. ROSE AND GULF SOUTH FLOODWALL
PHASE 2 (LPV-04.2A)
ST. CHARLES PARISH, LOUISIANA

DRAWN BY: J.L.S. PLOT DATE: 29 NOV 10 CADD FILE: TO: E18.DGN
CHECKED BY: R.E.S. JOB NO.: 21126 ENCLOSURE 3 SHEET 1

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

SUMMARY OF STABILITY ANALYSES
 MOBILIZED GEOFABRIC AT 11,600 LBS/FT

ANALYSIS	FACTOR OF SAFETY	COMMENT
TOL Block Search	1.453*	No Negative Interslice Forces, Tension Crack Not Needed
TOL Entry Exit A	1.491	No Negative Interslice Forces, Tension Crack Not Needed
TOL Entry Exit B	1.400*	No Negative Interslice Forces, Tension Crack Not Needed
SWL Block Search	1.534*	Added Tension Crack Line
SWL Entry Exit A	1.689	Added Tension Crack Line
SWL Entry Exit B	1.553	Added Tension Crack Line
LWL Block Search	1.401*	Added Tension Crack Line
LWL Entry Exit	1.428*	Added Tension Crack Line

*Indicates the output file is included in Appendix III.

NOTES:

1. STABILITY ANALYSES WERE PERFORMED USING SPENCER'S METHOD AND THE OPTIMIZATION SEARCH ROUTINE. TENSION CRACKS WERE ALSO MODELED IN THE ANALYSES TO ELIMINATE NEGATIVE NORMAL FORCES AND NEGATIVE INTERSLICE FORCES FOUND IN THE UPPER SLICES. SLOPEW, VERSION 7.17 BY GEO-SLOPE INTERNATIONAL, LTD. WAS USED FOR THE ANALYSES.
2. GEOSYNTHETIC REINFORCEMENT TENSILE STRENGTH USED IN THE ANALYSES IS BASED ON THE MINIMUM STRENGTH REQUIRED TO REACH TARGET OF SAFETY FACTOR WITH THE ADDITION OF THE SAND P... AT THE TOE OF EACH BERM.

GEOTECHNICAL ENGINEERS

**SLOPE STABILITY ANALYSIS
EXISTING CONDITION WITH SAND ROAD**

**U.S. ARMY CORPS OF ENGINEERS
REACH 1A FROM CROSS BAYOU
TO ST. ROSE AND GULF SOUTH FLOODWALL
PHASE 2 (LPV-04.2A)
ST. CHARLES PARISH, LOUISIANA**

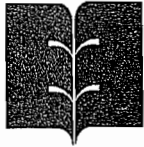
DRAWN BY: J.L.S.	PLOT DATE: 30 NOV 10	CADD FILE: TCE.BLS WITH SAND.DGN
CHECKED BY: R.E.S.	JOB NO.: 21126	ENCLOSURE 4 SHEET 1

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

SUMMARY OF STABILITY ANALYSES
 MINIMUM MOBILIZED GEOFABRIC WITH SAND FILL

ANALYSIS	FACTOR OF SAFETY	REQUIRED FABRIC MOBILIZATION (LBS/FT)	COMMENT
TOL Block Search	1.405*	800	No Negative Interslice Forces, Tension Crack Not Needed
TOL Entry Exit	1.400	0	Added Tension Crack Line
SWL Block Search	1.500*	2,900	Added Tension Crack Line
SWL Entry Exit A	1.585	0	Added Tension Crack Line
SWL Entry Exit B	1.587	0	Added Tension Crack Line
LWL Entry Exit	1.411	1,200	Added Tension Crack Line
LWL Block Search	1.401*	6,300	Added Tension Crack Line

*Indicates the output file is included in Appendix IV.



EUSTIS ENGINEERING SERVICES, L.L.C.

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PN 504-834-0157 | FN 504-834-0354
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16 December 2010

Bucktown Contractors and Company
Suite 201
1005 Veterans Memorial Boulevard
Kenner, Louisiana 70062

Attention Mr. George LeBourgeois
Vice President - Construction

Gentlemen:

Geotechnical Engineering Analyses and Evaluations
U.S. Army Corps of Engineers
Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall
Phase 2 (LPV-04.2a)
St. Charles Parish, Louisiana
Eustis Engineering Project No. 21126

Please refer to Eustis Engineering Services, L.L.C.'s letter of 6 December 2010 and the meeting at the U.S. Army Corps of Engineers' office on 9 December 2010. This current letter is providing to you additional analyses requested at that meeting.

Analyses contained in our 6 December 2010 letter evaluated levees constructed to el 16.5 as part of the current hurricane protection system. We understand this is the year 2057 grade and the USACE wishes an evaluation of levees constructed to an overbuild in the future.

For our analyses we have assumed a levee crown overbuilt to el 18 and the levee constructed within the same footprint that has recently been constructed. We have assumed the levee would be constructed after full consolidation of the preexisting levee in 22.5 years. We have evaluated partial consolidation of the fill required to raise the preexisting levee to el 16.5 and considered the gain in strength affected by consolidation. The results of our gain in strength evaluations are shown on Enclosure 1.

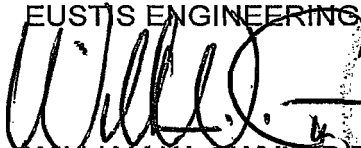
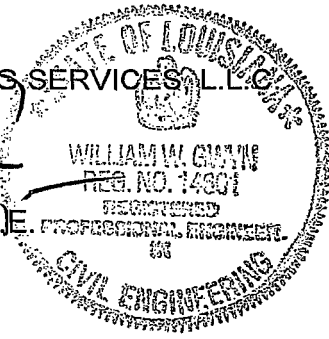
The cross-section assumed for our analyses is shown on Enclosure 2, Sheet 1, and the results of our analyses are shown on Enclosure 2, Sheet 2. Sheet 2 comments indicate

Bucktown Contractors and Company
16 December 2010

the mobilized geofabric strength necessary to provide the required USACE factor of safety. Computer output for these analyses are included as Appendix I.

We hope this fulfills your immediate needs relative to the project. Should you require further information or clarification of this letter, please do not hesitate to contact us.

Yours very truly,

EUSTIS ENGINEERING SERVICES, L.L.C.

WILLIAM W. GWYN, P.E.


WWG:aln/jkd

Enclosures 1 and 2
Appendix I

Copy to:
Circle Inc.
Attention Mr. Matt O'Brien
Email mobrien@circleconstructionllc.com

Centerline

Stratum	For T=0.789 U (from chart)	SU ₁₀₀ PEL (blue line)	SU ₁₀₀ AF (red line)	Su (Gain in strength due to levee at EL16)
1	0.97	330	391	800
2	0.88	390	440	434
3	0.82	470	512	504
4	0.87	570	602	598
5	0.93	660	684	682

Query Point 2

Stratum	For T=0.789 U (from chart)	SU ₁₀₀ PEL (blue line)	SU ₁₀₀ AF (red line)	Su (Gain in strength due to levee at EL16)
1	0.97	181	236	234
2	0.88	222	280	273
3	0.82	306	366	355
4	0.87	398	459	451
5	0.93	491	553	549

Query Point 3

Stratum	For T=0.789 U (from chart)	SU ₁₀₀ PEL (blue line)	SU ₁₀₀ AF (red line)	Su (Gain in strength due to levee at EL16)
1	0.97	167	205	204
2	0.88	207	246	241
3	0.82	291	330	323
4	0.87	385	423	418
5	0.93	478	517	514

Query Point 4

Stratum	For T=0.789 U (from chart)	SU ₁₀₀ PEL (blue line)	SU ₁₀₀ AF (red line)	Su (Gain in strength due to levee at EL16)
1	0.97	140	164	163
2	0.88	180	205	202
3	0.82	265	290	286
4	0.87	359	384	381
5	0.93	452	477	475

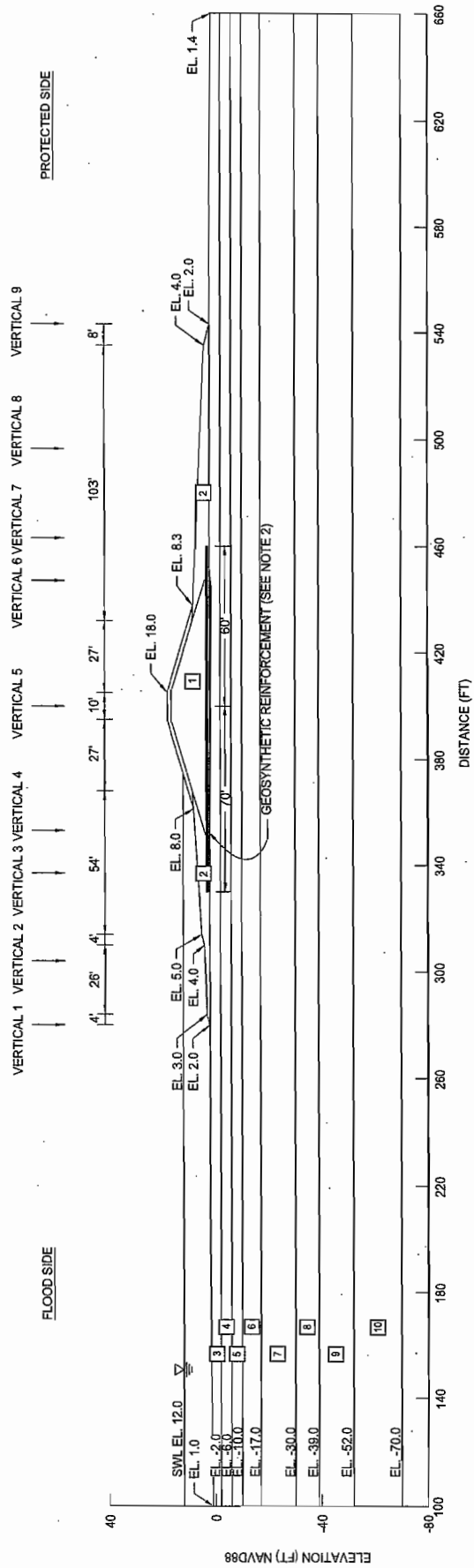
Query Point 5

Stratum	For T=0.789 U (from chart)	SU ₁₀₀ PEL (blue line)	SU ₁₀₀ AF (red line)	Su (Gain in strength due to levee at EL16)
1	0.97	82	N/A	N/A
2	0.88	125	N/A	N/A
3	0.82	216	N/A	N/A
4	0.87	315	N/A	N/A
5	0.93	411	N/A	N/A

NOTES:


SU₁₀₀ PEL = ULTIMATE UNDRAINED SHEAR STRENGTH FOR THE PREEXISTING LEVEE
I.E. APPROXIMATE EL 13

SU₁₀₀ AF = ULTIMATE UNDRAINED SHEAR STRENGTH FOR FILL ADDED FOR EL 16.5
LEVEE



SOIL NO.	DESCRIPTION	FRICTION ANGLE IN DEGREES	VERTICALS 1 AND 9			VERTICALS 2 AND 8			VERTICALS 3 AND 7			VERTICALS 4 AND 6			VERTICAL 5		
			UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.
1	EXISTING LEVEE	0	115	600	600	115	600	600	115	600	600	115	600	600	115	600	600
2	BERM	0	110	200	200	110	200	200	110	200	200	110	200	200	110	200	200
3	CLAY	0	90	100	170	105	170	170	105	300	300	105	300	300	120	800	800
4	CLAY	0	75	100	167	75	167	204	75	204	264	75	264	264	120	800	800
5	CLAY	0	75	103	202	75	202	241	75	241	273	75	273	273	87	434	434
6	CLAY	0	97	103	202	125	202	241	125	241	273	125	273	273	87	434	434
7	CLAY	0	104	200	286	104	286	323	104	323	355	104	355	355	109	504	504
8	CLAY	0	99	269	381	104	381	418	104	418	451	104	451	451	101	598	598
9	CLAY	0	99	386	475	100	475	514	100	514	549	100	549	549	101	682	682
10	CLAY	0	123	700	700	124	700	700	124	700	700	124	700	700	120	800	800

- NOTES:
1. SLOPE STABILITY ANALYSES WERE PERFORMED USING SPENCER'S METHOD AND THE OPTIMIZATION SEARCH ROUTINE. TENSION CRACKS WERE ALSO MODELED IN THE ANALYSES TO ELIMINATE NEGATIVE NORMAL FORCES AND NEGATIVE INTERSLICE FORCES FOUND IN THE UPPER SLICES. SLOPEW, VERSION 7.17 BY GEO-SLOPE INTERNATIONAL, LTD. WAS USED FOR THE ANALYSES.
 2. GEOSYNTHETIC REINFORCEMENT TENSILE STRENGTH USED IN THE ANALYSES IS BASED ON THE MINIMUM STRENGTH REQUIRED TO REACH TARGET OF SAFETY FACTOR WITH THE ADDITION OF THE SAND PAD AT THE TOE OF EACH BERM.



EUSTIS ENGINEERING SERVICES, LLC.
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METairie, LOUISIANA 70002

SLOPE STABILITY ANALYSIS
LEVEE WITH OVERBUILD TO EL. 18

U.S. ARMY CORPS OF ENGINEERS
REACH 1A FROM CROSS BAYOU
TO ST. ROSE AND GULF SOUTH FLOODWALL
PHASE 2 (LFPV-04.2A)
ST. CHARLES PARISH, LOUISIANA

DRAWN BY: J.L.S.	PLOT DATE: 16 DEC 10	CADD FILE: TOL EL 18 WITH SANDPAD
CHECKED BY: R.E.S.	JOB NO.: 21126	ENCLOSURE 2 SHEET 1

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

SUMMARY OF STABILITY ANALYSES

ANALYSIS	FACTOR OF SAFETY	COMMENT
TOL Block Search	1.402*	Added tension crack, limited bond friction to 600 psf 6,200 lbs/ft fabric strength
TOL Entry Exit A	1.404	Added crack line, limited bond friction to 600 psf 6,200 lbs/ft fabric strength
SWL Block Search	1.500*	Added tension crack 10,200 lbs/ft fabric strength
SWL Entry Exit A	1.518	Added tension crack 7,500 lbs/ft fabric strength
LWL Block Search	1.401*	Added tension crack, limited bond friction to 600 psf 10,200 lbs/ft fabric strength
LWL Entry Exit	1.420	Added tension crack line, limited bond friction to 600 psf 9,000 lbs/ft fabric strength

*Indicates the output file is included in Appendix I.



EUSTIS ENGINEERING SERVICES, L.L.C.

3011 28TH STREET
METAIRIE, LOUISIANA 70002-6019
PN 504-834-0157 | FN 504-834-0354
EMAIL: INFO@EUSTISENG.COM | SITE: WWW.EUSTISENG.COM

22 December 2010

Bucktown Contractors and Company
Suite 201
1005 Veterans Memorial Boulevard
Kenner, Louisiana 70062

Attention Mr. George LeBourgeois
Vice President - Construction

Gentlemen:

Geotechnical Engineering Analyses and Evaluations
U.S. Army Corps of Engineers
Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall
Phase 2 (LPV-04.2a)
St. Charles Parish, Louisiana
Eustis Engineering Project No. 21126

You have provided to Eustis Engineering Services, L.L.C., a copy of a letter dated 17 December 2010 addressed to you from the New Orleans East Bank Area office of the U.S. Army Corps of Engineers. The USACE has taken exception to the analyses and assumptions provided by Eustis Engineering in our 6 and 16 December 2010 letters. We are providing this letter to further amplify those assumptions and analyses.

We understand geofabric was delivered to the project in primarily 300-ft rolls. You have provided information that indicates 103, 300-ft rolls and four shorter rolls (150, 186, 267, and 279 feet) were delivered and installed. Three hundred-foot rolls installed continuously with 2-ft overlap would result in a layout pattern that would have three full length 120-ft panels for every five panels installed (see Enclosure 1). Seven panels were installed with the rolls shorter than 300 feet. Of these seven panels, five were continuous.

We further evaluated the layout pattern for failure surfaces occurring between el -30 and el -52 (as indicated by analyses). Using a methodology typically employed by the USACE (i.e., 45° failure surfaces extending from the failure plane to the surface), we calculate the percent available reinforcement for overlapped 300-ft rows to be 60% for failure surfaces at el -52 and 65% for failure surfaces at el -30. Please refer to Enclosure 2. For the 300-ft roll installation pattern summarized on Enclosure 1, the average minimum percent

- 1 -

Bucktown Contractors and Company
22 December 2010

available reinforcement is 10,400 pounds per foot. Previous analyses provided to you in our 6 and 16 December letters indicate this level of reinforcement would be acceptable for current conditions with the installation of sand fill berms beyond the toe of the levee. For future conditions and a levee with a crown constructed to el 18, this level of reinforcement would be acceptable. However, assuming the sand berms are placed to satisfy current conditions, the level of necessary future reinforcement would be reduced to 5,000 pounds per foot. These analyses are provided with this letter as Enclosure 3, Sheets 1 and 2, with computer output in Appendix I.

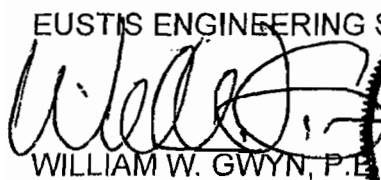
We should note that you have indicated the 300-ft rolls were discarded and remaining geofabric wasted when approximately 66 to 60 feet remained in the rolls. This was because installation became problematic. If 56 feet were discarded, the available reinforcement would be at least 71%, exceeding the minimum available discussed previously.

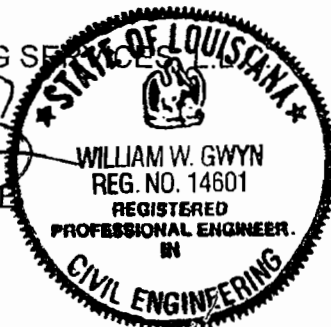
The USACE has also indicated that the gain in strength assumption puts the USACE and local sponsor at "undue risk due to the uncertainty of the projection." Our analyses are based on reasonable assumptions and demonstrate using the USACE criteria that the as-built criteria with the addition of berm meet USACE requirements¹.

We hope this fulfills your immediate needs relative to the project. Should you require further information or clarification of this letter, please do not hesitate to contact us.

Yours very truly,

EUSTIS ENGINEERING SERVICES, L.L.C.


WILLIAM W. GWYN, P.E.



WWG:aln/jkd

Enclosures 1 through 3
Appendix I

¹ At your request, we are currently in the process of obtaining borings and performing laboratory tests to verify these assumptions. We will provide these data when they are available.

Bucktown Contractors and Company
22 December 2010

Copy to:
Circle Inc.
Attention Mr. Matt O'Brien
Email mobrien@circleconstructionllc.com

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

GEOFABRIC PLACEMENT SUMMARY

ROLL LENGTH	PLACED PANELS	MASS ANALYSIS PANEL*
	120	
	120	
300	60, 62	
	120	
300	118, 4	
	120	
	120	
300	56, 66	
	120	
300	114, 8	
	120	
	120	
300	52, 70	
	120	
300	110, 12	
	120	
	120	A
300	48, 74	B
	120	C
300	106, 16	D
	120	E
	120	F
300	44, 78	G
	120	H
300	102, 20	I
	120	J
	120	
300	40, 82	
	120	
	120	
300	94, 28	
	120	
	120	

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

GEOFABRIC PLACEMENT SUMMARY
 (Continued)

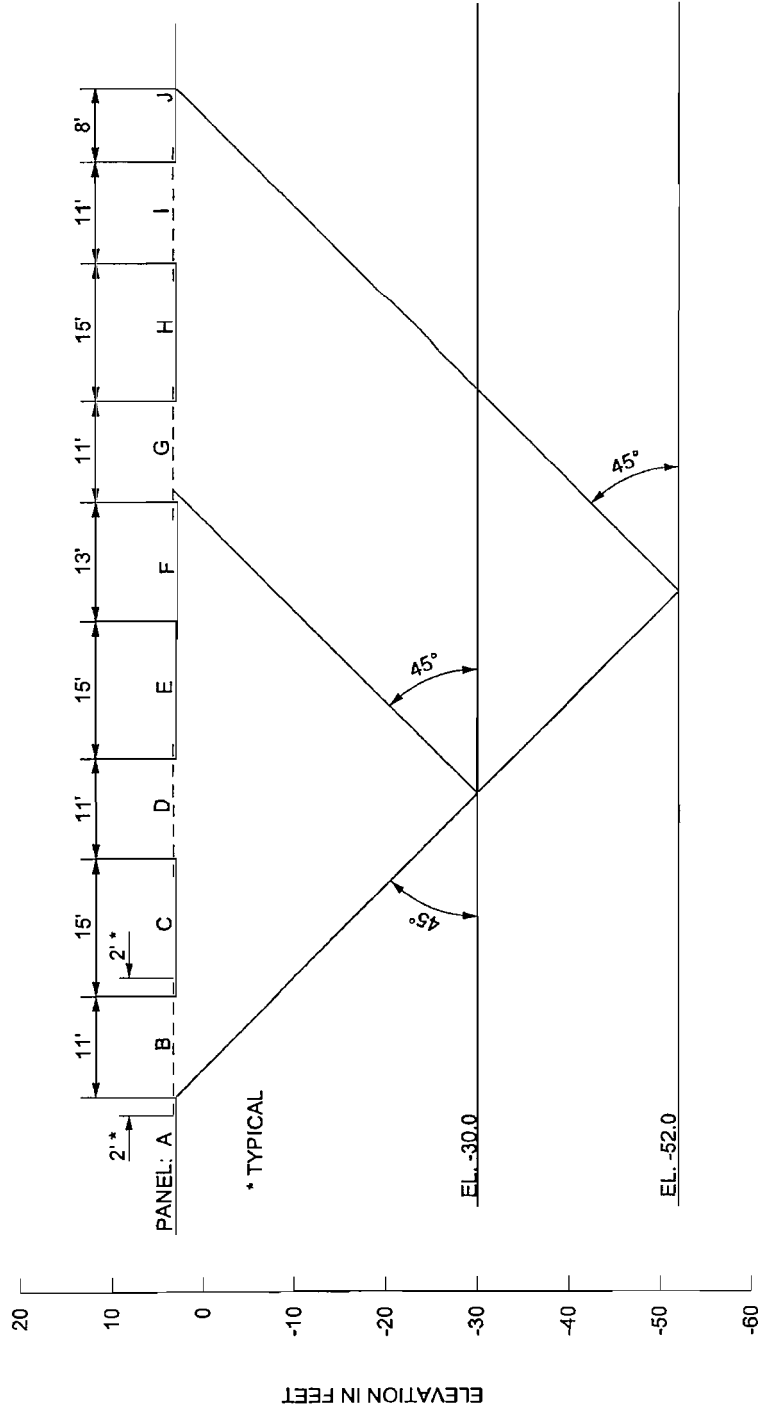
300	36, 86	
	120	
300	94, 28	
	120	
	120	
300	32, 90	
	120	
300	90, 32	
	120	
	120	
300	28, 94	
	120	
300	85, 36	
	120	
	120	
300	24, 98	
	120	
	82, 40	
	120	
	120	
300	20, 102	
	120	
300	78, 44	
	120	
	120	
300	16, 106	
	120	
300	74, 48	
	120	
300	12, 110	
	120	
300	70, 52	
	120	

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

GEOFABRIC PLACEMENT SUMMARY
 (Continued)

	120	
300	8, 114	
	120	
300	66, 56	
	120	
300	4, 118	
	120	
300	62, 60	
	120	
	120	One Cycle

*See Enclosure 2



NOTES:

- CONTINUOUS 120' PANELS
- - - LAPPED 120' PANELS (PANEL SEGMENTS LAPPED 2' PARALLEL TO LEVEE ALIGNMENT)
- ALL PANELS OVERLAPPED 2' PERPENDICULAR TO THE LEVEE ALIGNMENT

% AVAILABLE @ -30 = $15 + 15 + 13 / 66 = 0.65$

% AVAILABLE @ -52 = $15 + 15 + 13 + 15 + 8 / 110 = 0.60$

MINIMUM REQUIRED = 10440 LBS/FT



EUSTIS ENGINEERING SERVICES, L.L.C.

GEOTECHNICAL ENGINEERS

3011 28TH STREET

METairie, LOUISIANA

MASS EFFECTS

U.S. ARMY CORPS OF ENGINEERS
REACH 1A FROM CROSS BAYOU TO ST. ROSE
AND GULF SOUTH FLOODWALL
PHASE 2 (LPV-04.2A)
ST. CHARLES PARISH, LOUISIANA

DRAWN BY: J.L.S.

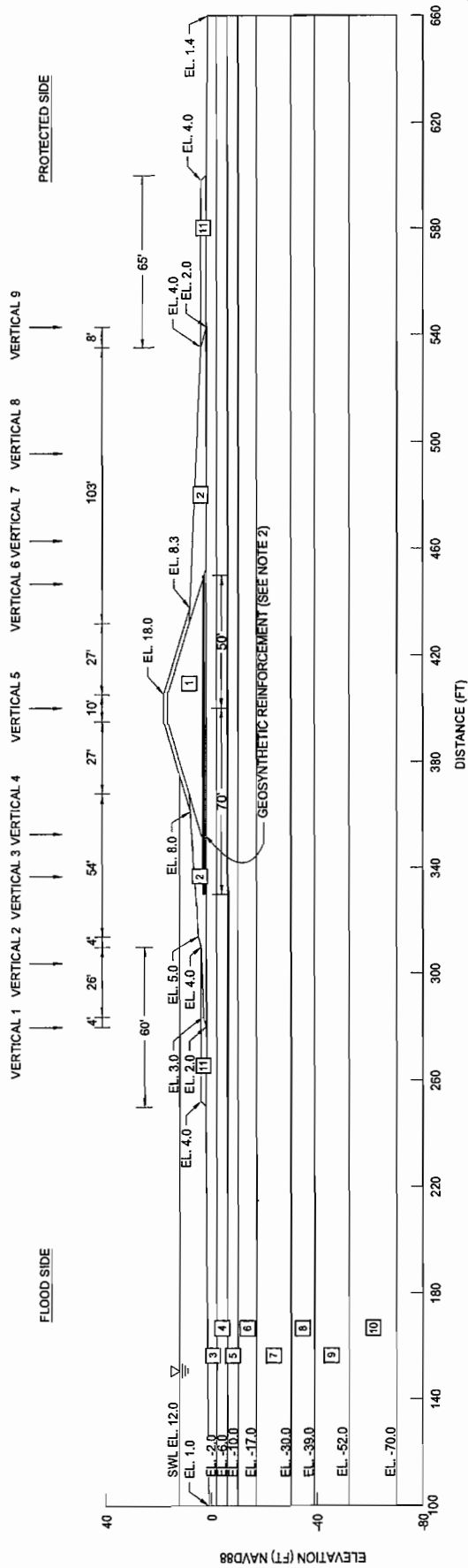
PLOT DATE: 22 DEC 10

CADD FILE:
MASS EFFECTS.DGN

CHECKED BY: W.W.G.

JOB NO.: 21126

ENCLOSURE 2



SOIL NO.	DESCRIPTION	FRICTION ANGLE IN DEGREES	VERTICALS 1 AND 9			VERTICALS 2 AND 8			VERTICALS 3 AND 7			VERTICALS 4 AND 6			VERTICAL 5		
			UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.	UNIT WEIGHT IN PCF	COHESION IN PSF	AVG.
1	EXISTING LEVEE	0	115	600	600	115	600	600	115	600	600	115	600	600	115	600	600
2	BERM	0	110	200	200	110	200	200	110	200	200	110	200	200	110	200	200
3	CLAY	0	90	100	100	105	170	170	105	300	300	105	300	300	120	800	800
4	CLAY	0	75	100	100	75	167	167	75	204	204	75	264	264	120	800	800
5	CLAY	0	75	103	103	75	202	202	75	241	241	75	273	273	87	434	434
6	CLAY	0	97	103	103	125	202	202	125	241	241	125	273	273	87	434	434
7	CLAY	0	104	200	200	104	286	286	104	323	323	104	355	355	109	504	504
8	CLAY	0	99	269	269	104	381	381	104	418	418	104	451	451	101	598	598
9	CLAY	0	99	386	386	100	475	475	100	514	514	100	549	549	101	682	682
10	CLAY	0	123	700	700	124	700	700	124	700	700	124	700	700	120	800	800
11	SAND	30	120	0	0	120	0	0	120	0	0	120	0	0	120	0	0

NOTES:

1. SLOPE STABILITY ANALYSES WERE PERFORMED USING SPENCER'S METHOD AND THE OPTIMIZATION SEARCH ROUTINE. TENSION CRACKS WERE ALSO MODELED IN THE ANALYSES TO ELIMINATE NEGATIVE NORMAL FORCES AND NEGATIVE INTERSLICE FORCES FOUND IN THE UPPER SLICES. SLOPEW, VERSION 7.17 BY GEO-SLOPE INTERNATIONAL, LTD. WAS USED FOR THE ANALYSES.
2. GEOSYNTHETIC REINFORCEMENT TENSILE STRENGTH USED IN THE ANALYSES IS BASED ON THE MINIMUM STRENGTH REQUIRED TO REACH TARGET OF SAFETY FACTOR WITH THE ADDITION OF THE SAND PAD AT THE TOE OF EACH BERM.



EUSTIS ENGINEERING SERVICES, L.L.C.

GEOTECHNICAL ENGINEERS

3011 20TH STREET, METairie, LOUISIANA

SLOPE STABILITY ANALYSIS
LEVEE WITH OVERBUILD TO EL. 18
U.S. ARMY CORPS OF ENGINEERS
REACH 1A FROM CROSS RAYON
TO ST. ROSE AND GULF SOUTH FLOODWALL
PHASE 2 (LPV-04.2A)
ST. CHARLES PARISH, LOUISIANA

DRAWN BY: J.L.S.
CHECKED BY: R.E.S.

PLOT DATE: 20 DEC 10
JOB NO.: 21126

CADD FILE:
ENCLOSURE 3 SHEET 1

U.S. ARMY CORPS OF ENGINEERS
 REACH 1A FROM CROSS BAYOU TO ST. ROSE AND GULF SOUTH FLOODWALL
 PHASE 2 (LPV-04.2A)
 ST. CHARLES PARISH, LOUISIANA
 EUSTIS ENGINEERING PROJECT NO. 21126

SUMMARY OF STABILITY ANALYSES

ANALYSIS	FACTOR OF SAFETY	COMMENT
TOL Block Search	1.412*	Added tension crack line No fabric
TOL Entry Exit A	1.425	Added tension crack line No fabric
SWL Block Search	1.503*	Added tension crack line, limited bond friction to 600 psf 1,500 lbs/ft fabric strength
SWL Entry Exit A	1.503	Added tension crack line, limited bond friction to 600 psf 1,000 lbs/ft fabric strength
LWL Block Search	1.401*	Added tension crack line, limited bond friction to 600 psf 5,000 lbs/ft fabric strength
LWL Entry Exit	1.403	Added tension crack line, limited bond friction to 600 psf 1,200 lbs/ft fabric strength

*Indicates the output file is included in Appendix I.

Exhibit "C"



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
NEW ORLEANS EAST BANK AREA OFFICE
990 NORTH CORPORATE DRIVE, SUITE 102
HARAHAN, LOUISIANA 70123

November 19, 2010

New Orleans East Bank Area Office (09-D-0052-0004-C-0059)

SUBJECT: Contract Number W912P8-09-D-0052, Task Order No. 0004 St. Charles Parish, Levee - Reach 1A from Cross Bayou to St. Rose and Gulf South Floodwall - Phase 2, LPV-04.2A, St. Charles, LA.

Buck Town Contractors & Co.
1005 Veterans Memorial Blvd., Suite 201
Kenner, LA 70062

Gentlemen:

Reference Deficiency No. 1 which was issued on March 25, 2010. Your company has yet to provide an acceptable corrective action to resolve the incorrectly installed reinforcement geotextile. Your latest email correspondence stated that your company would not be able to meet with the Corps until the week of November 29th since you and your consultant were still reviewing data and trying to formulate a corrective action. Continued abandonment of the project is not acceptable.

Since your company has not provided an acceptable corrective action to date, the Government is directing you to either comply with the original contract documents or construct the degraded sections of levee in accordance with an alternative levee section that the Government has developed. If your company decides to construct the levee in accordance with attached drawings C-101A, C-104A, C-105A, and C-304a, assure that these drawings are included in the as-builts. In either case, your company should immediately make plans to mobilize back to the site and begin working. If your company formulates a corrective action plan that you would like to pursue, please forward it to the Government for review and approval.

You are reminded that all work must be completed by the current contract completion date which is January 8, 2011 or liquidated damages in the amount of \$2,555.00 will be assessed for each calendar day of delay until work is completed and accepted. Also note that in the area of timely performance in your contract evaluation, your company will be rated unsatisfactory if work is not completed by the contract completion date. You are required to update your project schedule providing a realistic approach to completing the remaining work. Your revised schedule should be accompanied by a narrative detailing your plan to complete the contract. Your updated schedule and narrative must be submitted to my office by December 1, 2010.

Assure any revisions to your Accident Prevention Plan and Quality Control Plan are submitted for review prior to starting work. If you have any questions, please contact me at 504-862-2980.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey J. Falati". The signature is fluid and cursive, with the first name "Jeffrey" and last name "Falati" clearly distinguishable.

Jeffrey J. Falati, P.E.
Administrative Contracting Officer

Enclosure

DWGs: C-101A, C-104A, C-105A, and C-304a

